APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,933	10/08/2004	Elena Voltolina	P16836-US1	6701

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EXAMINER
D'AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _21-29_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _21-29_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _08 October 2004_ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 10-8-2004 fails to comply with 37 CFR

1.98(a)(2), which requires a legible copy of each cited foreign patent document; *each*

non-patent literature publication or that portion which caused it to be listed; and all other

information or that portion which caused it to be listed. It has been placed in the

application file, but the information referred to therein has not been considered.

> The 3GPP specification listed in the IDS was not transmitted.

Drawings

Figures 1-2 should be designated by a legend such as --Prior Art-- because only

that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in

compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. The replacement sheet(s) should be labeled

"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

> These diagrams appear to only show that which currently exists in industry

standard systems.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

<u>Claims 21, 23-27 and 29</u> rejected under 35 U.S.C. 103(a) as being unpatentable over Beven US 6,167,036 and further in view of 3GPP Specification TS 25.305 V5.4.0 and Rangarajan et al. US 6,757,544.

As per **claims 21 and 29,** Beven teaches a method in a mobile telecommunication network for providing a first radio network controlling unit with positioning information for a mobile terminal located within a cell and served by a radio base station covering said cell (Abstract, figure 3 and C4, L44-65 teaches a sectored antenna whereby the location of the mobile can be determined based upon which sector it is located in),

which is associated with a portion of the cell wherein the mobile terminal is located (figures 3 and 7-8 show a sectored antenna), from a second radio network controlling unit that controls the resources of said radio base station to the first radio network controlling unit that controls the connection of said radio base station to the mobile station, wherein the cell portion is covered by one antenna beam transmitted from said radio base station, whereby the cell portion is identifiable by identification of the antenna beam, wherein each antenna beam covers a respective cell portion (The abstract teaches a soft/softer handoff which inherently requires control setup data to be transmitted between two BSC's *if/when a user crosses a BSC boundary*, eg. if moving between two BTS's that are controlled by different BSC's);

AND distinguished by means of a phase reference provided by a pilot channel or by a downlink dedicated physical channel comprising dedicated pilots (C12, L57-65 teaches each BTS broadcasting a pilot signal in each sector it covers).

But is silent on the cell being identifiable by means of a cell Geographical Area

Information (GAI) and transmitting a cell GAI.

3GPP TS 25.305 v5.4.0 teaches locating a mobile in a cell area based upon cell

ID or geographical coordinates:

4.3.1 Cell ID Based Method

In the cell ID based (i.e. cell coverage) method, the position of an UE is estimated with the knowledge of its serving Node B. The information about the serving Node B and cell may be obtained by paging, locating area update, cell update, URA update, or routing area update.

The cell coverage based positioning information can be indicated as the Cell Identity of the used cell, the Service Area Identity or as the geographical co-ordinates of a position related to the serving cell. The position information shall include a QoS estimate (e.g. regarding achieved accuracy).

When geographical co-ordinates are used as the position information, the estimated position of the UE can be a fixed geographical position within the serving cell (e.g. position of the serving Node B), the geographical centre of the serving cell coverage area, or some other fixed position within the cell coverage area. The geographical position can also be obtained by combining information on the cell specific fixed geographical position with some other available information, such as the signal RTT in FDD ([14]) or Rx Timing deviation measurement and knowledge of the UE timing advance, in TDD ([15]). **ALSO SEE SECTIONS 5.2 TO 5.2.2 WHICH DESCRIBES SERVING AND DRIFT RNC'S and SECTION 8.1.2.2 to 8.2.**

Rangarajan teaches determining a user's position based on the cell ID and

sector (Para #25):

[Para# 0025] In one embodiment of the invention, the service request received by communication node 16 (or locator application 50) at block 301 may include information that enables the communication node 16 to automatically determine the general location of the communication device 12, 32 and/or its associated user 20, 30. For example, the general location of the device 12, 32 and its associated user 20, 30 may be a cell ID, a sector ID or a cell and sector ID (e.g. cell sector ID 12, 1234). The service request may also include input from user 20, 30 indicating additional specific location information. For example, the specific location may be in the form of a specific street address (e.g. 25 South LaSalle Street).

It would have been obvious to one skilled in the art at the time of the invention to

modify Beven, such that GAI is used, to provide means for using location information to

support the handoff procedure by transmitting said location information to the new

BSC/BTS so it can more quickly/optimally support the new mobile roaming into it's

area/cell.

As per **claim 23,** Beven teaches claim 21, wherein the cell portion covered by the antenna beam is determined by location points describing the geographical coordinates of said antenna beam (figures 3, 7 and 8 show sectors from an antenna whereby the location points of the coordinates are inherently known since the engineer/technician who installed said sectored antenna beams knows which direction the beams were oriented).

As per **claim 24,** Beven teaches claim 21, **but is silent on** wherein the cell portion consists of an area that extends from the Radio Base Station to the cell border within a detected angle of arrival of signals from the mobile terminal.

3GPP Specification teaches several (well known) methods to determine direction/location of a mobile user and/or the cell portion supporting a user, such as TDOA, RTD, TDOA, GSP, etc..

It would have been obvious to one skilled in the art at the time of the invention to modify Beven, such that the cell portion consists of an area that extends from the Radio Base Station to the cell border within a detected angle of arrival of signals from the mobile terminal, to provide means for determining a more exacting location when the user's sector is known (eg. AOA will provide a finer-grained location).

As per **claim 25,** Beven teaches claim 21, **but is silent on** wherein the mobile telecommunication network is a UMTS network and the first radio network controlling unit is a first Radio Network Controller, RNC, and the second radio network controlling unit is a second Radio Network Controller, RNC.

Beven teaches a system similar to a UMTS/GSM network since he discloses a CDMA system which uses BTS's and BSC's.

The 3GPP Specification teaches SERVING AND DRIFT RNC'S (sections 5.2 TO 5.2.2). Also see sections 8.1.2.2 to 8.2.

The examiner takes **Official Notice** that UMTS's are well known in the art and one skilled would replace Beven's network with a UMTS network (and their "parallel"

components) that provides similar operation (eg. Beven's network would use a core, RNC's and Node-B's to support GSM, etc.).

It would have been obvious to one skilled in the art at the time of the invention to modify Beven, such that the mobile network is a UMTS network and the first radio network controlling unit is a first Radio Network Controller, RNC, and the second radio network controlling unit is a second Radio Network Controller, RNC, to provide support for using the Beven design in similar cellular networks which are industry standards.

As per **claims 26-27,** Beven teaches claim 25, **but is silent on** wherein the first RNC is a serving RNC and the second RNC is a drift RNC AND wherein the drift RNC transmits the Cell Portion GAI to the serving RNC over the Iur interface.

Beven teaches a soft handoff which is well known to use terminology describing the two BSC/BTS's involved as Serving, Target, Drift and Anchor. Hence the GAI information would be transmitted between the two BTS's/BSC's using a link between them (eg. over the Iur link for a UMTS network and/or a telecomm link for Beven's CDMA network).

The 3GPP Specification teaches SERVING AND DRIFT RNC'S (sections 5.2 TO 5.2.2) and connecting RNC's via the Iur link (see figure 5.1). Also see sections 8.1.2.2 to 8.2 and sections 6.2 to 6.6.2.2.

It would have been obvious to one skilled in the art at the time of the invention to modify Beven, such that the first RNC is a serving RNC and the second RNC is a drift RNC AND wherein the drift RNC transmits the Cell Portion GAI to the serving RNC over the Iur interface, to provide support locational data between two RNC's during a soft handover.

Claim 22 rejected under 35 U.S.C. 103(a) as being unpatentable over

Beven/3GPP/Rangarajan and further in view of Levin US 2003/0021334.

As per **claim 22,** Beven teaches claim 21, **but is silent on** wherein the pilot

channel is the Secondary Common Pilot Channel (S-CPICH).

Levin teaches handoffs which use the S-CPICH:

[Para #24] FIG. 1 is a diagram of a wireless communication system 100 that
supports a number of users and wherein various aspects and embodiments of the
invention may be implemented. Each terminal 106 may communicate with one or more
base stations 104 on the forward and reverse links at any given moment, depending on
whether or not the terminal is active and whether or not it is in soft handoff. The forward
link (i.e., downlink) refers to transmission from the base station to the terminal, and the
reverse link (i.e., uplink) refers to transmission from the terminal to the base station.

[Para #112] Similarly, W-CDMA supports a number of different pilot channels. First, a
common pilot channel (CPICH) may be transmitted on a primary base station antenna.
Second, a diversity CPICH may be generated based on non-zero pilot data and
transmitted on a diversity antenna of the base station. Third, one or more secondary
CPICHs may be transmitted in a restricted part of the cell, and each secondary CPICH
is generated using a non-zero channelization code. Fourth, the base station may further
transmit a dedicated pilot to a specific user using the same channelization code as the
user's data channel. In this case, the pilot symbols are time-multiplexed with the data
symbols to that user. Accordingly, it will be understood by those skilled in the art that the
techniques described herein are applicable for processing all of the above different
types of pilot channels, and other pilot channels that may also be transmitted in a
wireless communication system.

It would have been obvious to one skilled in the art at the time of the invention to

modify Beven, such that the pilot channel is the S-CPICH, to provide means for

receiving/processing multiple pilots if/when transmitted by the BTS.

Claim 28 rejected under 35 U.S.C. 103(a) as being unpatentable over

Beven/3GPP/Rangarajan and further in view of Kim et al. US 2002/0061764.

As per **claim 28,** Beven teaches claim 27, wherein the Cell Portion

GAI is an information element of the RNSAP-protocol.

The 3GPP Specification teaches transmitting the Cell Location information (eg. GAI) between the two RNC's (see table 9.5):

Table 9.5: Information to be transferred between RNCs

Information	UE assisted	UE based
Geographical position of the primary serving cell	Yes	Yes
Relative neighbour cell geographical position	Yes	Yes
Accuracy range of the geographic position values	Yes	Yes
IPDL-Alpha param for OLPC when using IPDLs in 3.84 Mcps TDD	Yes	Yes
Maximum Power the UE may use when using IPDLs in 3.84 Mcps TDD	Yes	Yes

Kim teaches the RNSAP being the protocol used to transmit data between RNC's:

[Para# 0031] In FIG. 5, the RRC is used between the mobile station UE and RNC, the NBAP is used between the base station Node B and the RNC as a lub interface <u>protocol, the RNSAP</u> is used between RNCs as a lur interface protocol, and the RANAP is used between the RNC and CN as an lu interface protocol. Also, at the lub interface the base station and the RNC are a server and client, respectively, and at the lur interface the DRNC and the SRNC respectively act as a server and client. <u>These protocols can include various control messages for the radio access bearer resources in the service areas between the base stations and RNCs, and between CN and RNCs.</u>

It would have been obvious to one skilled in the art at the time of the invention to modify Beven, such that the Cell portion GAO is an information element of the RNSAP protocol, to provide means for sending the location data via an industry standard messaging protocol.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Rohani US 5,999,522

2. Riley et al. US 5,940,762

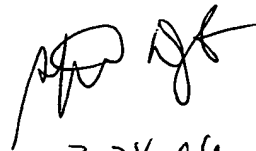3. Takai US 6,571,097

     4. Willars et al. US 2003/0013443

     5. Wallentin et al US 6,292,667

     6. Hogan US 2002/0151304

     7. Choi et al. US 6,594,492

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

STEVE M. D'AGOSTA
PRIMARY EXAMINER

3-24-04